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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,884	03/01/2002	Dominique Hamoir	Q68485	8179
7590	12/12/2005		EXAMINER	
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC 2100 Pennsylvania Avenue, N.W. Washington, DC 20037-3213			LEUNG, CHRISTINA Y	
			ART UNIT	PAPER NUMBER
			2633	

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/084,884	HAMOIR ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Christina Y. Leung	2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 27 September 2005 and 22 November 2005.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-3 and 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-3 and 6 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on 27 September 2005 has been entered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-3 are rejected under 35 U.S.C. 102(a) as being anticipated by Grubb et al. (WO 00/49721 A2; Corvis Corporation, assignee).

Regarding claim 1, Grubb et al. disclose a WDM optical communication system (Figures 1-4), the system comprising:

input means and output means for an optical signal (nodes 14 including transmitters 16 and receivers 18);

an optical fiber path 28 connecting signal-transmissively the input and output means (page 9, lines 34-36; page 10, lines 1-31);

wherein the optic signal is amplified by means of Raman amplification and the optical fiber path comprises at least one Raman amplifier (signal varying device 12 including Raman

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gain section 30; page 10, lines 32-38; page 11, lines 1-6; Figures 3 and 4 show different versions of device 12 in detail), further comprising WDM means (including polarization coupler 39 and dichroic filter 38) for coupling at least two polarized pump radiation wavelengths (from pump lasers 32<sub>1...m</sub>; page 11, lines 29-38; page 12, lines 1-13) with wavelengths less than the signal radiation wavelength into the Raman amplifier (page 12, lines 31-33),

wherein the polarization of one of the pump radiation wavelengths is maintained at a predetermined difference in polarization with respect to the polarization of the other pump radiation wavelengths, wherein the polarization of the pump radiations of the lower part of the pump wavelength band is orthogonal with respect to that of the upper part (page 11, lines 35-38; page 12, lines 1-4; page 21, lines 12-20).

Examiner respectfully notes that the orthogonal pump radiation wavelengths disclosed by Grubb et al. inherently have a “predetermined difference in polarization” (since they are orthogonal to each other), and Grubb et al. discloses that this orthogonality is maintained using polarization combiner 39.

Regarding claims 2 and 3, Grubb et al. disclose the Raman amplification is a distributed or localized Raman amplification (page 6, lines 14-18; page 7, lines 12-29).

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grubb et al.

Regarding claim 6, Grubb et al. disclose that the amplification is in the C-Band or L-Band (specifically, they disclose that the transmission signal wavelength range may be between 1520 nm to 1620 nm, which is well understood in the art as the C-Band and L-Band by definition; page 12, lines 31-33). They further disclose that the pump wavelengths corresponding to this C-Band or L-Band amplification may have a range between 1420 nm to 1520 nm (page 12, lines 31-33), but they do not specifically disclose that the pump wavelengths may be 1427, 1439, 1450, and 1485 nm in particular. However, Grubb et al. disclose four other pump wavelengths as an example (1450, 1460, 1485, and 1495 nm; page 21, lines 12-20), and it would be well understood in the art that other specific pump wavelengths in the appropriate range disclosed by Grubb et al. may be used. It would have been obvious to a person of ordinary skill in the art to specifically have 1427, 1439, 1450, and 1485 nm as the pump wavelengths in the system disclosed by Grubb et al. as an engineering design choice of specific wavelength values. The claimed differences exist not as a result of an attempt by Applicants to solve an unknown problem but merely amount to the selection of expedients known as design choices to one of ordinary skill in the art. Again, Grubb et al. already disclose that the system may include four pump wavelengths (as in the example from page 21, lines 12-20) within a range between 1420 nm to 1520 nm (page 12, lines 31-33).

#### *Response to Arguments*

6. Applicants' arguments filed 27 September 2005 have been fully considered but they are not persuasive.
7. Examiner respectfully disagrees with Applicants' assertion on page 5 of their response that "Grubb fails to disclose, teach or suggest maintaining a predetermined 'difference' in

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polarization between one of the pump radiation wavelengths and the remaining pump radiation wavelengths, as set forth in claim 1.” On the contrary, Examiner notes that the orthogonal pump radiation wavelengths disclosed by Grubb et al. inherently have a “predetermined difference in polarization” (since they are orthogonal to each other), and Grubb et al. discloses that this orthogonality is maintained using polarization combiner 39 (page 11, lines 35-38; page 12, lines 1-4).

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Christina Y Leung  
Christina Y Leung  
Patent Examiner  
Art Unit 2633*